Draft

National Park Service, Northeast Region

Coastal and Barrier Network Steering Committee
Meeting Summary

September 27, 2000

Participants: Charles Roman (USGS), Norm Rubenstein (EPA), P. A. Buckley (NPS), Hilary Neckles (USGS), Mary Foley (NPS-BOSO), Howard Ginsberg (USGS) Glenn Gutenspergen (USGS), Allan O'Connell (USGS), Carl Zimmerman (NPS-ASIS), Nancy Finley (NPS-CACO), Jim Ebert (NPS-FIIS), Charles Rafkind (NPS-COLO), George Frame (NPS-GATE), Elizabeth Johnson (NPS I&M Program Coordinator), Sara Stevens (Research Associate, URI)

Purpose: The purpose of the steering committee is to guide the development of a long term monitoring program for eight parks in the Northeast Region Coastal and Barrier Network including: Assateague Island National Seashore (ASIS), Cape Cod National Seashore (CACO), Fire Island National Seashore (FIIS), Gateway National Recreation Area (GATE), Sagamore Hill National Historic Site (SAHI), Colonial National Historical Park (COLO), George Washington's Birthplace (GEWA) and Thomas Stone NHS (THST). The Cape Cod prototype program should provide a significant boost to our planning effort.

The Coastal and Barrier Network will receive $630,000 in 2001 to gather existing data, plan and begin a vital signs monitoring program. When fully funded in 2002, the network will receive $866,885 annually. These funds are to design a single, integrated, monitoring program within the network to augment existing park programs, personnel and funding to monitor physical and biological resources. The monitoring program may include short-term tactical monitoring as well as long-term monitoring. The goal is to provide scientifically sound information for managing park resources and informing the public, it should also allow managers to confront and mitigate threats to the park, as well as operate more effectively in legal and political arenas. The Washington Office divisions for Air Resources, Biological Resource Management, Geological Resources, Natural Resource Information, and Water Resources are coordinating efforts to provide funding and technical support to park networks for developing these integrated monitoring programs.

Background:

The first steering committee meeting was held in March 2000 to plan for the Coastal and Barrier Network "Vital Signs" Scoping Workshop that was held at Gateway National Recreation Area in April 2000. This workshop was held to begin developing a candidate set of "vital signs" or environmental indicators that could be further tested for possible inclusion in a long term monitoring program. A draft summary of that workshop has been prepared.

On September 27th the steering committee met for a second time at the University of Rhode Island, Kingston, RI. The steering committee was expanded to include USGS representatives working on coastal research and management issues as well as park representatives from some network parks (ASIS, FIIS, GATE, CACO and COLO). The group was convened for several purposes:

- to review the draft scoping workshop report prior to sending it to participants,
- to plan the next steps in developing a coastal vital signs monitoring program, and
- to develop a detailed list of network needs for 2001-2002 funding.

"Vital Signs" Scoping Workshop Report

It was agreed that the scoping workshop was successful in developing "laundry lists" of vital signs for monitoring in the network. Some workgroups were more successful at this than others, and it was agreed by the steering committee that further work is necessary in fine tuning these lists of monitoring questions and candidate. The workshop report will be sent to participants for review and comment. A cover letter and this prepared Steering Committee Meeting report will be attached to update workshop participants on our progress toward developing an operational monitoring program.

Contributions from the Cape Cod Prototype Program

In the early 1990s, the National Park Service initiated a program to gain experience with monitoring different types of natural resources in 11 "prototype" monitoring programs that included 22 parks. This program was never fully implemented because of insufficient funding (only 7 of the 11 programs have received funding as of FY00), but much has been learned from these prototype programs that can now be transferred to other parks as they develop their monitoring programs. The seven funded prototype monitoring programs will continue to be funded at current levels and will serve as "centers of excellence" that will do more in-depth monitoring and continue research and development work to benefit other parks. The prototype monitoring parks are also nested within the I&M network structure, and will provide expertise and support to other parks in their network.

Cape Cod National Seashore was selected as a prototype park and is currently developing an operational monitoring program. The Steering Committee discussed the role of this prototype program in integrating and assisting with the development of the Coastal and Barrier Network's Vital Signs Monitoring Program. Cape Cod has agreed to provide staff expertise where needed to help organize workgroups or conduct training of new staff within the network, as well as support for protocol field testing. The Steering Committee also suggested that basic protocols designed for Cape Cod are available or will be in the near future and that these could be evaluated for use in other parks within the network. Some examples include Jim Allen's protocol he is designing to monitor shoreline change at Cape Cod. Jeff Marion is beginning a project to design and test sampling protocols for

monitoring visitor use and resource impact that might be expanded to include other network parks. The NPS Water Resources Division is developing a protocol for Level I estuarine water quality inventories that may be applicable to long term monitoring in these parks as well. The Coastal Ecosystems Study Unit (CESU) has funded a project to evaluate water quality data in coastal parks and to develop methods for evaluating how land use change impacts on coastal water quality.

Cape Cod has not decided on a data management strategy and is open to cooperative ventures with the Network as a whole.

Steps to Continue with the Development of an Operational Monitoring Program:

1. Immediately hire a Network Coordinator (GS 11-12 Ecologist) to lead the effort to inventory biological resources, and to plan, develop, and execute a long-term operational monitoring program. A good science and resource management background is essential. This person will serve as a liaison to parks, supervise network I&M staff and will bring in outside programs that link the monitoring programs. Location: URI or park.

2. Hire a data manager to manage existing information (inventory data, bibliographies, research data, specimens, create spatial data layers where appropriate, etc…), develop databases and assure the Servicewide databases meet Network needs.

3. Organize small workgroups to flesh out basic monitoring program needs for:
    - data management
    - vegetation mapping
    - aerial photography

4. Organize small workgroups (no more than five people) to:

    a. develop a documented, justified operational monitoring strategy to measure status and trends of selected environmental indicators for management issues OR,
    b. develop a written scope of work, list of products and request for proposals so that a cooperator can be found to complete (a).

    These workgroups must meet and produce a written product by February 15, 2001. The written products will become part of a proposed network approach to operational monitoring. The workgroups will be based upon the following issues:
    - Shoreline Change
    - Estuarine Water Quality (nutrients only)
    - Freshwater Quality (nutrients only)
    - Water Quality (Contaminants only)
    - Visitor Use and Recreation
    - Animal and Plant Species and Habitats of Special Concern

During the steering committee's discussion on resource extraction it was decided that the most important ecosystem stressor identified during the scoping workshop was groundwater extraction, and that it could be included under freshwater quality.

Workgroup Tasks and Considerations

Data Management

TASK: Define data management, describe data management needs and develop a scope of work that would allow cooperator to develop a data management plan.

Lead: Charles Roman, USGS
Participants: Chuck Rafkind (COLO), Dafna Reiner (ASIS data manager), Mark Adams (CACO), Chuck LaBash (URI, FTSC), EPA E-MAP personnel (Stephen Hale, EPA-Narragansett), Elizabeth Johnson (I&M Coordinator), Mark Watawa (WASO).

Considerations:
A major emphasis of the inventory and monitoring effort is to make information more readily available to decision makers and the public and to integrate natural resource information with other park operations such as interpretation and maintenance. Considerable network resources should be allocated for improved information management. The I&M program is developing several tools to make information more readily available to park managers and others for planning, management, and decision-making. These tools should be reviewed.

The data management workgroup will accomplish the following;

- List and describe existing and planned NPS databases/data templates.
- Identify existing data management staff in the Network identify existing hardware and software relevant to data management in the parks, and discuss the specific role that parks can take in data management.
- Describe the types of data to be included in the data management program (specimens and samples, electronic data, spatial data, hard copy data, reports, etc.)
- Discuss the role of data analysis as part of the data management plan
- Describe the EPA EMAP Information Management Plan and its relevance to Network needs. Describe other large data management programs that may be of relevance (e.g., STORET).
- Describe the merits and shortcomings of existing NPS ecosystem data management programs (e.g., from prototype parks).
- Identify various scenarios for implementing a data management program for the Network (e.g., centralized at a university, individual park based, a lead data management park, combinations, etc.). Include recommendations on staffing needs, computer needs, costs, etc.
- Using the above information, prepare a Scope of Work for contracting-out development of a network data management plan.

Vegetation Mapping

TASK: Develop a plan, justification of need and budget to complete vegetation mapping in the Coastal and Barrier Network parks. It was suggested that this task be funded with 2001 funds so we need a complete product. (note-this does not include submersed vegetation)

Lead: Chris Lea (NPS-ASIS)
Participants: Nigel Shaw (BOSO), Lesley Sneddon (ABI), Eveline Martin (CACO).

Considerations:

- Evaluate utility of ongoing vegetation mapping in the network.
  Are vegetation maps complete at ASIS, FIIS and CACO?
- Develop needs assessment for unmapped parks.
  What level of mapping is needed at GATE, SAHI, COLO, GEWA/THST?
- Describe what data is needed and how it will be used.
  How will map completion contribute to a vital signs monitoring program?
- Suggest methods for mapping based on identified needs.
- List sources of data and photography.
- Evaluate existing classification and keys.
- Develop list of potential cooperators.
- Develop cost estimates and time frames.
- Write scope of services if not using I&M vegetation mapping standards. Justify why existing standards should not be used.

Aerial Photography

TASK 1: Prepare assessment (scope of work) to describe aerial photography data needs, uses and specifications for monitoring in the network (e.g. Why aquatic systems need to be flown in 2-3yr intervals or terrestrial systems need to be flown in 3-5yr intervals).

Lead: Carl Zimmerman
Participants: Chuck Rafkind (COLO), Nigel Shaw (BOSO) and Patti Dienna.

Considerations:

- Scanning and georectification.
- Catalog of existing aerial photography contracts in parks.
- Needs assessment.

TASK 2: Draft proposal for Coastal and Barrier Network to acquire photos on a routine basis.
Lead: Nigel Shaw and Patti Dienna

Considerations:

- Detail the specifications for photography.
- List sources
- Evaluate existing data and existing contracts for photos.
- List sources of photography, costs to acquire and requirements to make data accessible and usable.
- Identify potential cooperators.

Shoreline Change

TASK: Assessment of Alternatives for Coastal and Estuarine Shoreline Change Monitoring

Lead: Brendan Cain (CACO)
Participants: Jim Allen (USGS), Jeff List (WHOI), Rebecca Beavers (NPS Geological Resources Division), Mark Duffy (ASIS), and Nancy Finley (CACO).

Considerations:
- What do managers think is important?
- Catalog and evaluate each park's shoreline change program if one exists.
  For example: Columbia University using Lidar in Jamaica Bay (GATE), Jim Allen working at Sandy Hook and developing CACO protocol, ASIS using Lidar, VIMS work at COLO. Workgroup should create a template to fill in data.
- Consider various protocols: Lidar, GPS, Videography and Aerial Photo Analysis. Do a cost and methods comparison
- Catalog and evaluate park needs and detail methodologies to address these needs, including costs, expertise, staffing and potential cooperators.
- Assess technology and approach to beachfront shoreline and estuarine shoreline monitoring.
- Review draft protocol for CACO (Dec. 2000) for beachfront monitoring.
- Review guidance on geologic monitoring of vital indicators (Geo Res. Div).
- Justify the need to institutionalize such a monitoring program.
- Identify other shoreline change monitoring programs that may be able to cost-share with the network program. Economies of scale. Who can cost share?
- Draft a network plan including budget.

Estuarine Eutrophication

TASK: Evaluate existing estuarine eutrophication monitoring protocols, and develop network protocol.

Lead: Hillary Neckles (USGS)
Suggested Participants: Norm Rubinstein (EPA), Charley Roman (USGS), Veronica Berounsky, Scott Nixon or Brian Sturgis (or both)

Considerations:
The workgroups should provide written products or prepare a scope of work to facilitate locating a cooperator to develop needed products including:

Phase One Products:

- Prioritization of monitoring questions for estuarine eutrophication.
- A review of candidate indicators developed through the Vital Signs Scoping Workshop process.
- A review of existing Cape Cod prototype protocols for monitoring estuarine eutrophication and applicability of those protocols network-wide.
- An evaluation of existing estuarine eutrophication monitoring programs inside and adjacent to parks and the network.
- A review of monitoring recommendations for NPS Level 1 inventory of estuarine recources.
- Prioritization of vital signs for monitor the effects of estuarine eutrophication.
- A list of cooperators who might be interested in writing a full study plan for monitoring estuarine eutrophication in the Coastal and Barrier parks.
- Recommendations of how the 2001-2002 monitoring money should be spent in further developing a functional monitoring program for estuarine eutrophication.

Phase Two Products:

- A draft of an operational monitoring plan for estuarine eutrophication.
- A description of data management needs.
- An efficient plan for staffing or accomplishing this work.
- Cost estimates.

Freshwater Quality *(nutrients only) (to include water quality and quantity)*

TASK: Evaluate CACO and ASIS water quality monitoring programs and prepare a scope of work to develop a network protocol for freshwater quality.

Lead: John Portnoy (CACO)
Participants: A participant list is currently being developed.

Considerations:
The workgroups should provide written products or prepare a scope of work to facilitate locating a cooperator to develop needed products including:

- An evaluation of individual park needs and priorities for monitoring the effects of nutrients on freshwater quality.
- An evaluation of existing freshwater quality monitoring programs dealing with nutrients, inside and adjacent to parks and the network.
- A conceptual model to summarize cause and effect relationships of nutrients on freshwater quality in each park and in the network as a whole.

- Prioritization of monitoring questions.
- Prioritization of vital signs necessary to monitor freshwater quality in terms of nutrients.
- A review of existing Cape Cod protocols for monitoring nutrient effects on freshwater quality and applicability of those protocols network-wide.
- A draft of an operational monitoring plan.
- A description of data management needs.
- A list of cooperators that can be hired to write a full study plan for monitoring freshwater quality in the Coastal and Barrier parks.
- An efficient plan for staffing or accomplishing this work.
- Cost estimates.
- Determination of how the 2001-2002 monitoring money should be spent in further developing a functional monitoring program for freshwater quality (nutrients).

Water Quality *(Contaminants only)*

TASK: Develop a list of non-nutrient related contaminants in water, detection limits and collection methods. Develop a contaminants monitoring protocol for the network.

Leads: John Tanacredi (GATE) and Nancy Finley (CACO)
Participants: A participant list is currently being developed.

Considerations:

The workgroups should provide written products or prepare a scope of work to facilitate locating a cooperator to develop needed products including:

- An evaluation of individual park needs and priorities for monitoring water quality in terms of contaminants.
- An evaluation of existing water quality monitoring programs dealing with contaminants inside and adjacent to parks and the network.
- A conceptual model to summarize cause and effect relationships based upon water quality contaminants in each park and in the network as a whole.
- Prioritization of monitoring questions.
- Prioritization of vital signs necessary to monitor water quality contaminants.
- A review of existing Cape Cod protocols for monitoring water quality and applicability of those protocols network-wide.
- A draft of an operational monitoring plan.
- A description of data management needs.
- A list of cooperators that can be hired to write a full study plan for monitoring contaminants in the Coastal and Barrier parks.
- An efficient plan for staffing or accomplishing this work.
- Cost estimates.

- Determination of how the 2001-2002 monitoring money should be spent in further developing a functional monitoring program for contaminants.

Visitor Use and Recreation

TASK: Develop a scope of work to develop a monitoring program for visitor use in the Network.

Lead: Jeff Marion
Participants: A participant list is currently being developed.

Considerations:

- An evaluation of individual park needs and priorities for monitoring visitor use and recreation.
- An evaluation of existing visitor use and recreation monitoring programs inside and adjacent to parks and the network.
- A conceptual model to summarize cause and effect relationships based upon visitor use and recreation in each park and in the network as a whole.
- Prioritization of monitoring questions for this issue.
- Prioritization of vital signs necessary to monitor visitor use and recreation.
- A review of existing Cape Cod protocols for monitoring visitor use and recreation and the applicability of those protocols network-wide.
- A draft of an operational monitoring plan.
- A description of data management needs.
- A list of cooperators that can be hired to write a full study plan for monitoring visitor use and recreation in the Coastal and Barrier parks.
- An efficient plan for staffing or accomplishing this work.
- Cost estimates.
- Determination of how the 2001-2002 monitoring money should be spent in further developing a functional monitoring program visitor use and recreation.

Plant and Animal Species and Habitats of Special Concern

TASK: (NOTE: A Scoping Workshop will be held for the Network's Inventory Program early 2001 for vertebrate and vascular plant species. Further review of monitoring questions, review of protocols and the development of a monitoring workgroup will be established during this meeting as well.)
Lead: Currently not identified.
Participants: A participant list has not been developed.

Considerations:

- Legal mandate to monitor T&E Species.
- Recent push to manage exotic species.

- How Species and Habitats of Concern might fall under other issues such as Visitor Use and Recreation and Water Quality.